

July 24, 2003
Case No.: DP-304183 (7500/60)
Serial No.: 09/943,961
Filed: August 31, 2001
Page 15

— REMARKS —

In the Non-Final Office Action, Examiner Leykin rejected pending claims 1-27 on various grounds. The Applicant responds to each ground of rejection as subsequently recited herein, and respectfully requests reconsideration and further examination of the present application under 37 CFR § 1.112:

- A. Claims 1, 2, 5-8, 10, 11, 14-17, 19, 20, and 23-26 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,411,060 B1 to *Jung*

The Applicant has thoroughly considered Examiner Leykin's remarks concerning the patentability of claims 1, 2, 5-8, 10, 11, 14-17, 19, 20 and 23-26 over *Jung*. The Applicants have also thoroughly read *Jung*.

Independent claims 1, 10 and 19. The essential foundation of *Jung* is a rotation of a rotor (FIG. 8 of *Jung*) as a function of a detection of A phase position and/or or B phase positions of the rotor via a position detector 70 (FIGS. 2 and 5 of *Jung*). This essential foundation of *Jung* is described throughout *Jung*, and is a limitation of independent claims 1, 5 and 6 of *Jung*.

Independent claims 1, 10 and 19 originally recited "aligning the rotor pole and the stator pole in response to a reception of an actuation command", which may or may not include a detection of a phase position of the rotor, and "cranking the rotor in a direction as dictated by the actuation command for a predetermined time period", which is taught in the preset invention as being accomplished exclusive of any detection of a phase position of the rotor.

July 24, 2003
Case No.: DP-304183 (7500/60)
Serial No.: 09/943,961
Filed: August 31, 2001
Page 16

To obviate this anticipation rejection, independent claims 1 and 10 have been amended to recite "subsequently cranking the rotor in a direction as dictated by the actuation command for a predetermined time period exclusive of any detection of a phase position of the rotor", and independent claim 19 has been amended to recite "subsequently cranking said rotor in a direction as dictated by the actuation command for a predetermined time period exclusive of any detection of a phase position of said rotor"

Withdrawal of the rejection of independent claims 1, 10 and 19 under 35 U.S.C. §102(e) as being anticipated by *Jung* is therefore respectfully requested.

Dependent claims 2, 11, and 20. Claim 2 depends from amended independent claim 1. Therefore, dependent claim 2 includes all of the elements and limitations of amended independent claim 1. It is therefore respectfully submitted by the Applicant that dependent claim 2 is allowable over *Jung* for at least the same reason as set forth herein with respect to amended independent claim 1 being allowable over *Jung*. Withdrawal of the rejection of dependent claim 2 under 35 U.S.C. §102(e) being anticipated by *Jung* is therefore respectfully requested.

Claim 11 depends from amended independent claim 10. Therefore, dependent claim 11 includes all of the elements and limitations of amended independent claim 10. It is therefore respectfully submitted by the Applicant that dependent claim 11 is allowable over *Jung* for at least the same reason as set forth herein with respect to amended independent claim 10 being allowable over *Jung*. Withdrawal of the rejection of dependent claim 11 under 35 U.S.C. §102(e) being anticipated by *Jung* is therefore respectfully requested.

July 24, 2003
Case No.: DP-304183 (7500/60)
Serial No.: 09/943,961
Filed: August 31, 2001
Page 17

Claim 20 depends from amended independent claim 19. Therefore, dependent claim 20 includes all of the elements and limitations of amended independent claim 19. It is therefore respectfully submitted by the Applicant that dependent claim 20 is allowable over *Jung* for at least the same reason as set forth herein with respect to amended independent claim 19 being allowable over *Jung*. Withdrawal of the rejection of dependent claim 20 under 35 U.S.C. §102(e) being anticipated by *Jung* is therefore respectfully requested.

Independent claims 5, 14 and 23. *Jung* teaches the two methods for aligning the phase positions of a rotor. The first method, as illustrated in FIG. 3 of *Jung*, involves a sequential exciting of A phase (ST1), B phase (ST2), and C phase (ST3) or vice-versa. The second method, as illustrated in FIG. 4 of *Jung*, involves at a minimum a sequential excitation of A phase (ST12), B phase (ST13), and A phase (ST16, ST17). *Jung* fails to teach a sequential exciting of two phases, exclusively. By comparison, as illustrated in FIG. 4A, the present invention discloses a sequential and exclusive exciting of two phases, a phase adjacent a target phase (S76) and then the target phase (S74), when aligning the target phase.

To obviate this anticipation rejection, independent claims 5, 14 and 23 have been amended to "sequentially and exclusively exciting a second phase of the motor and the first phase of the motor to rotate the rotor pole to the initial position. the second phase being adjacent the first phase", and independent claim 23 has been amended to recite "sequentially and exclusively exciting a second phase of said motor and the first phase of said motor to rotate said rotor pole to the initial position. the second phase being adjacent the first phase".

Withdrawal of the rejection of independent claims 5, 14 and 23 under 35 U.S.C. §102(e) as being anticipated by *Jung* is therefore respectfully requested.

July 24, 2003
Case No.: DP-304183 (7500/60)
Serial No.: 09/943,961
Filed: August 31, 2001
Page 18

Independent claims 6, 15 and 24. To warrant this anticipation rejection, *Jung* must show each and every element set forth in independent claims 6, 15 and 24. See, MPEP §2131. The Applicant respectfully traverses this anticipation rejection of independent claims 6, 15 and 24, because Jung does not disclose, teach or suggest the combination of “subsequently and concurrently exciting a second phase of the motor and a third phase of the motor, the second phase and the third phase being remote from the target position” as recited in independent claims 1, 10 and 19. This is evidenced by the fact that each excitation step (ST1-ST3 of FIG. 3; ST12, ST13, ST16 and ST7 of FIG. 4; and ST22, ST 25 and ST25 of FIG. 6) taught by Jung never involves an excitation of two or more phases.

Withdrawal of the rejection of independent claims 6, 15 and 24 under 35 U.S.C. §102(e) as being anticipated by *Jung* is therefore respectfully requested.

Independent claims 7, 16, and 25. Again, the essential foundation of *Jung* is a rotation of a rotor (FIG. 8 of *Jung*) as a function of a detection of A phase position and/or or B phase positions of the rotor via a position detector 70 (FIGS. 2 and 5 of *Jung*).

Independent claims 7, 16 and 25 originally recited “sequentially exciting a plurality of phases of the switched-reluctance motor for one or more cycles whereby the rotor is cranked to rotate in the desired direction”, which is taught in the preset invention as being accomplished exclusive of any detection of a phase position of the rotor, and “rotating the rotor in the desired direction upon an expiration of the one or more cycles”, which may or may not include a detection of a phase position of the rotor.

July 24, 2003
Case No.: DP-304183 (7500/60)
Serial No.: 09/943,961
Filed: August 31, 2001
Page 19

To obviate this anticipation rejection, independent claims 7 and 16 have been amended to recite "sequentially exciting a plurality of phases of the switched-reluctance motor for one or more cycles exclusive of any detection of a phase position of the rotor whereby the rotor is cranked to rotate in the desired direction", and independent claim 25 has been amended to recite "sequentially exciting a plurality of phases of said switched-reluctance motor for one or more cycles exclusive of any detection of a phase position of said rotor whereby said rotor is cranked to rotate in the desired direction"

Withdrawal of the rejection of independent claims 7, 16 and 25 under 35 U.S.C. §102(e) as being anticipated by *Jung* is therefore respectfully requested.

Independent claims 8, 17, and 26. Again, the essential foundation of *Jung* is a rotation of a rotor (FIG. 8 of *Jung*) as a function of a detection of A phase position and/or B phase positions of the rotor via a position detector 70 (FIGS. 2 and 5 of *Jung*).

Independent claims 8, 17 and 26 originally recited "determining the rotor is in the holding position", which may or may not include a detection of a phase position of the rotor, and "dithering the rotor upon the rotor in the holding position for a predetermined time period", which is taught in the preset invention as being accomplished exclusive of any detection of a phase position of the rotor.

To obviate this anticipation rejection, independent claims 8 and 17 have been amended to recite "dithering the rotor exclusive of any detection of a phase position of the rotor upon the rotor in the holding position for a predetermined time period", and independent claim 26 has been amended to recite "dithering said rotor exclusive of any detection of a phase position of said rotor upon said rotor in the holding position for a predetermined time period".

July 24, 2003
Case No.: DP-304183 (7500/60)
Serial No.: 09/943,961
Filed: August 31, 2001
Page 20

Withdrawal of the rejection of independent claims 7, 16 and 25 under 35 U.S.C. §102(e) as being anticipated by *Jung* is therefore respectfully requested.

B. Claims 3, 4, 9, 12, 13, 18, 21, 22 and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,411,060 B1 to *Jung* and U.S. Patent No. 6,075,332 to *McCann*

Dependent claims 3, 4, 12, 13, 21 and 22. Claims 3 and 4 depend from amended independent claim 1. Therefore, dependent claims 3 and 4 include all of the elements and limitations of amended independent claim 1. It is therefore respectfully submitted by the Applicant that dependent claims 3 and 4 are allowable over *Jung* in view of *McCann* for at least the same reason as set forth herein with respect to amended independent claim 1 being allowable over *Jung*. Withdrawal of the rejection of dependent claims 3 and 4 under 35 U.S.C. §103(a) being unpatentable over *Jung* in view of *McCann* is therefore respectfully requested.

Claims 12 and 13 depend from amended independent claim 10. Therefore, dependent claims 12 and 13 include all of the elements and limitations of amended independent claim 10. It is therefore respectfully submitted by the Applicant that dependent claims 12 and 13 are allowable over *Jung* in view of *McCann* for at least the same reason as set forth herein with respect to amended independent claim 10 being allowable over *Jung*. Withdrawal of the rejection of dependent claims 12 and 13 under 35 U.S.C. §103(a) being unpatentable over *Jung* in view of *McCann* is therefore respectfully requested.

July 24, 2003
Case No.: DP-304183 (7500/60)
Serial No.: 09/943,961
Filed: August 31, 2001
Page 21

Claims 21 and 22 depend from amended independent claim 19. Therefore, dependent claims 21 and 22 include all of the elements and limitations of amended independent claim 19. It is therefore respectfully submitted by the Applicant that dependent claims 21 and 22 are allowable over *Jung* in view of *McCann* for at least the same reason as set forth herein with respect to amended independent claim 19 being allowable over *Jung*. Withdrawal of the rejection of dependent claims 21 and 22 under 35 U.S.C. §103(a) being unpatentable over *Jung* in view of *McCann* is therefore respectfully requested.

Independent claims 9, 18 and 27. To warrant this patentability rejection, all the claim limitations recited in independent claims 9, 18 and 27 must be taught or suggested by the combination of *Jung* and *McCann* in as complete detail as contained in independent claim 9, 18 and 27. See, MPEP §2131. The Applicant respectfully traverses this anticipation rejection of independent claims 9, 18 and 27, because *Jung* exclusively teaches a pulse width modulation technique as opposed to an amplitude modulation technique and therefore teaches away from "selectively reducing an ampere level of a phase current corresponding to the holding position" as recited in independent claims 9, 18 and 27.

Withdrawal of the rejection of independent claims 9, 18, and 27 under 35 U.S.C. §103(a) being unpatentable over *Jung* in view of *McCann* is therefore respectfully requested.

July 24, 2003
Case No.: DP-304183 (7500/60)
Serial No.: 09/943,961
Filed: August 31, 2001
Page 22

SUMMARY

Examiner Leykin's §§102(e) and 103 (a) rejections of claims 1-27 have been obviated by the amendment herein of claims 1, 5-7, 9, 10, 14-19 and 23-27 and the remarks herein relating to the patentability of claims 2-4, 8, 11-13, and 20. The Applicant respectfully submits that claims 1-27 as amended herein fully satisfy the requirements of 35 U.S.C. §§ 102, 103 and 112. In view of the foregoing amendments and remarks, favorable consideration and early passage to issue of the present application are respectfully requested. If any points remain in issue that may best be resolved through a personal or telephonic interview, Examiner Leykin is respectfully requested to contact the undersigned at the telephone number listed below.

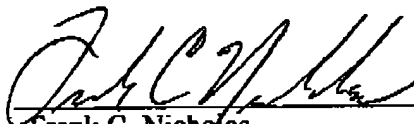
Dated: July 24, 2003

Respectfully submitted,
BRUNO P. B. LEQUESNE, *et al.*

DELPHI TECHNOLOGIES, INC.
Legal Staff
PO Box 5052
Mail Code: 480-410-202
Troy, Michigan 48007-5052
Phone: (248) 813-1235

Scott A. McBain,
Registration No. 37,181
Attorney for Applicants

CARDINAL LAW GROUP
Suite 2000
1603 Orrington Avenue
Evanston, Illinois 60201
Phone: (847) 905-7111
Fax: (847) 905-7113



Frank C. Nicholas
Registration No. 33, 983
Attorney for Applicants